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The antibacterial effect of probiotic Nis-Lact-Bif on *E. coli* and *Campylobacter jejuni*

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Background: Probiotics are live microorganisms acting through varied mechanisms affecting the density of the commensal microbiota against pathogens. Nowadays, because of the problems associated with antibiotic use, probiotic strains provide a new and better option for treatment of infectious diseases like diarrhea. The aim of this study was to investigate the antibacterial synergism of *Lactobacillus* spp., *Bifidobacterium* spp. and *Escherichia coli* strain Nissle 1917 (ECN) on clinical sample of diarrheagenic *E. coli* and *Campylobacter jejuni*.

Methods: A paper disk diffusion technique used to evaluate the antibacterial activity. Sterile 6 mm paper disks were saturated with probiotic suspensions made by settling probiotic medications into distilled water. Three kinds of disks were prepared. One disk for *Lactobacillus* spp. and *Bifidobacterium* spp., another disk for ECN and third disk were made by mixing probiotics. Clinical sample of diarrheagenic *E. coli* and *Campylobacter jejuni* were cultivated on separated Muller Hinton agars and disks were placed on the inoculated Muller Hinton agars. The plates were incubated with a microaerophilic gas pack inside an anaerobiosis jar, for 24 h at 37°C.

Results: The Zone of Inhibition (ZOI) of bacterial growth was measured. All pathogenic microorganisms showed sensitivity to the probiotic disks. The combined disk had a better effect against pathogens.

Conclusion: A considerable synergistic effect of probiotic strains was observed and it means that combined strains can be more efficient against intestinal pathogens.

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